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An Aboriginal Rock Alignment in the Toiyabe Range, Central Nevada

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ABSTRACT

Two unusual rock walls in end-to-end alignment situated southeast of Austin, Lander County, Nevada, are described and their possible origin and use discussed. The eastern wall, about 300 feet long, extends from a canyon bottom, up a moderately steep hillside, and terminates just short of cliffy outcrops about two-thirds of the way to the ridge crest. The western wall, approximately 200 feet long, runs about halfway up the opposite side of the ridge. Judging from the type of projectile points found nearby, the walls are tentatively dated to the Reveille or the Underdown phases of the local archeological sequence (i.e., *ca.* 1000 BC to AD 1300). Several alternative hypotheses are considered to explain this feature, probably the best of which is that the rock barriers are prehistoric hunting fences, constructed to ambush deer or antelope.

INTRODUCTION

Traditionally, American archeologists have tended to restrict their attention to excavating deeply stratified, culturally productive prehistoric habitation sites. Particularly in the Great Basin, this strategy has centered on the excavation of several key caves and rockshelters, in the attempt to monitor prehistoric cultural change. Such a strategy is successful when directed at chronology but inadequate by itself to illuminate problems of prehistoric ecology and cultural process. Habitation sites are known to

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provide the richest harvest of artifacts and faunal and floral remains, but archeologists interested in the subsistence practices and general ecological systems of prehistoric, nonsedentary peoples cannot afford to restrict their attention to a few, albeit carefully chosen, sites of any single type.

An ecological approach to archeology demands that attention be directed toward all aspects of the prehistoric adaptation; therefore not only the "base camp," but also those subsidiary aspects of adaptive technology, such as "house rings," bedrock mortars and grinding surfaces, lithic quarries, prehistoric "trails," petroglyphs, and pictographs must be studied. Although such satellite features are often involved with the prehistoric techno-ecological adaptation, they are usually absent from habitation sites and as such have been consistently ignored. This imbalance is of little importance when chronology is the primary aim, but for modern archeology—with aspirations toward reaching beyond temporal-spatial schemes—the narrow view must be widened to include these outlying features. Data that were not formerly gathered or evaluated are critical for more comprehensive cultural reconstruction.

No group of satellite feature has suffered more from the chronological emphasis by archeologists than have anomalous rock structures such as walls, pens, and other alignments, which are difficult to interpret and which occur throughout the western deserts. A notable exception to this trend is the work of Rogers, who spent more than 30 years locating and mapping such stone features in the deserts of southern California. According to Rogers (1966), these features may span 10,000 years and several cultural groups, and some may be representational in nature. Similar puzzling rock features are known from the Black Rock Desert in northwestern Nevada (Reichman, 1966).

Evidence also exists that some of the eastern California stone alignments relate to prehistoric hunting practices. On a mesa in the Panamint Mountains near Death Valley is a complex maze of one-tiered stone walls and "rooms" (Pourade, 1966, pp. 17–18), and on a similar mesa in the Cady Mountains, Rogers (1966, p. 76) located a set of parallel rock walls, stretching about 460 feet. The longest known alignment in this area is about 600 feet. Although these structures seem too low to have been of much assistance in diverting game, a superstructure of brush could have increased their effectiveness. Further support for the use of rock walls as hunting devices has been presented by Heizer and Baumhoff (1962, pp. 18–20, 38–40, 41–45, 52–56). Similar stone features have been reported in southern Utah and northern Arizona (Wetherill, 1954; Euler, 1966, p. 26).

With these structures in mind, we discuss rock alignments in central

Nevada that may relate to prehistoric hunting. The possible age of the feature is considered, and several alternative hypotheses regarding its function are advanced.

DESCRIPTION

The rock alignments described below are southeast of Austin, Lander

FIG. 1. East wall, view toward northwest.

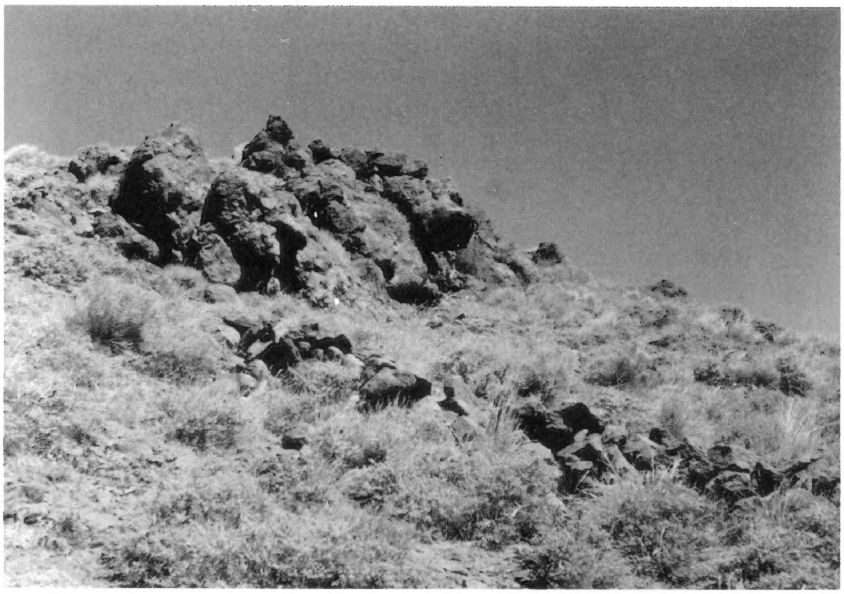

FIG. 2. East wall, detail of cliffy outcrops.

County, Nevada, approximately 2 miles south of U.S. Highway 50, near the Bob Scott Summit (NE 1/4, SE 1/4, Sect. 4, T. 18N, R. 44E). This site has been assigned number "26-La-601" in the records of the Nevada State Museum, Carson City. The alignment consists of two rock walls, referred to here as the east and west walls.

The east wall extends about 300 feet, from a canyon bottom, up a moderately steep hillside and ends about 10 feet below cliffy rock outcrops that are about two-thirds of the way to a ridge crest (figs. 1, 2). The wall averages 2–3 feet in height and about 1–2 feet in breadth. As each 10-foot section of wall contains approximately 100 stones, the total east wall contains about 3000 stones. The stones are of various sizes, but many are more than 1.5 feet in diameter and weigh 50 pounds or more (fig. 3). They are of the same rock type as nearby outcrops. To move the larger stones would require a considerable effort by at least two people. The wall is approximately two-thirds intact, although the smallest stones (probably from the top) have fallen along most of the length. In a few places, the entire wall has collapsed for distances of up to 10 feet.

The west wall also begins in a ravine, extends about 200 feet up the opposite side of the ridge, and stops about halfway to the crest (fig. 4). Its structure is similar to that of the east wall. Both walls are entirely of

FIG. 3. Detail of east wall.

stone with no trace of wood either as supports or superstructure. No signs of nails, wires, or other historic objects are found in the vicinity of either stone wall.

PROJECTILE POINTS

A cursory search in the immediate vicinity of the walls disclosed five projectile points (fig. 5). The map (fig. 6) shows sites where these points were found as well as the location of the walls and topography of the area. As the search for artifacts was not thorough, additional artifacts may be present. Each artifact found was measured (table 1) and identified according to the procedures outlined by Thomas (1970a). All unbroken edges were examined for wear under a 60× stereoscopic microscope. The morphological terminology follows Binford (1963), and flintworking terms are consistent with Crabtree's (1972) glossary. The specimen numbers refer to the Reese River Ecological Project catalogue, and the artifacts are at the American Museum of Natural History.

RR2870 (FIG. 5A), HUMBOLDT CONCAVE BASE, TYPE B: The tip of the artifact is missing, and the remaining distal part is quite crumbly, as if the stone had been physically altered (perhaps by heat). The pressure flaking, although not rigidly patterned, is largely oblique, with several flake scars

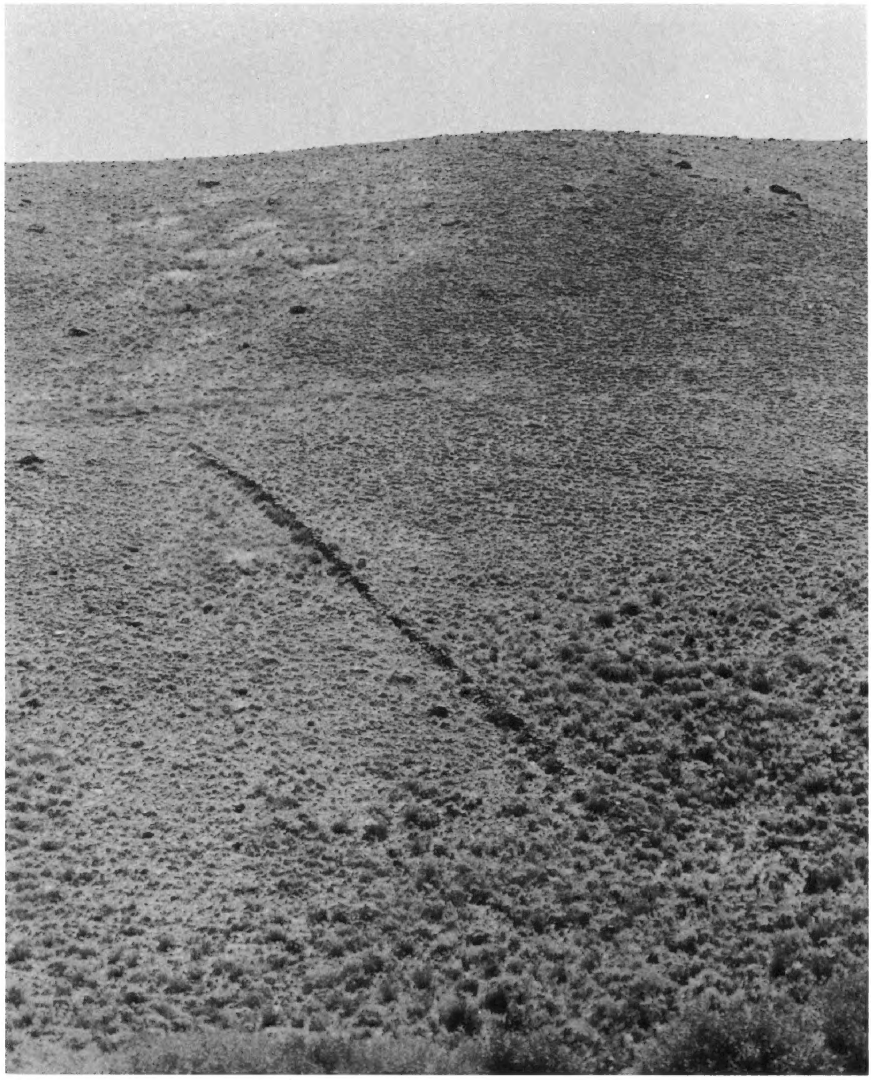

FIG. 4. West wall, view toward southeast.

extending slightly beyond the midline. Some of the distal lateral flake scars are somewhat expanding, whereas those on the proximal half are generally parallel-sided and much narrower. The base was slightly thinned and indented after the lateral edges were finished. No evidence of wear was found. The lateral edges appear generally sharp and sinuous, although a few prominent projections have minute step flaking.

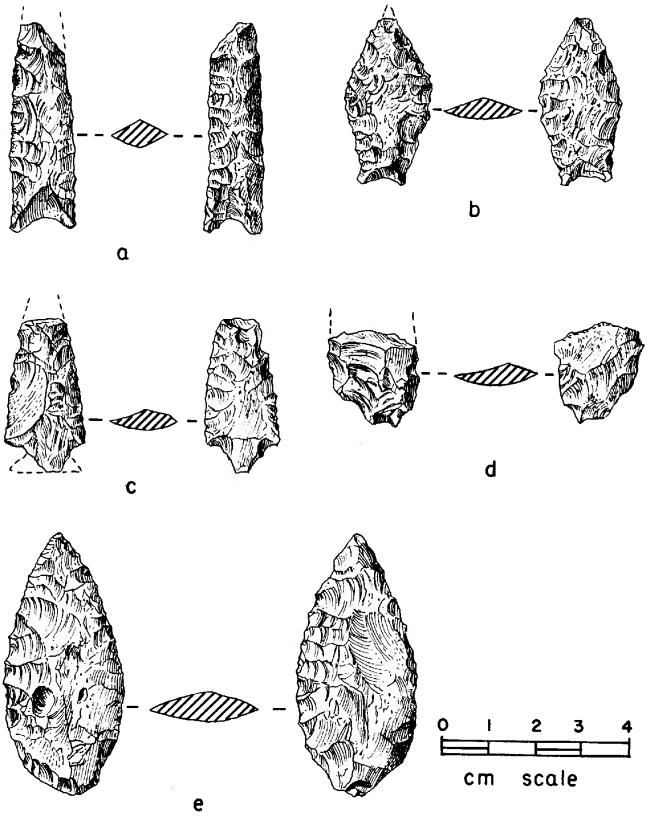

FIG. 5. Projectile points recovered near Bob Scott rock walls: a. RR2870; b. RR2869; c. RR2868; d. RR2867; e. RR2871.

RR2869 (FIG. 5B), HUMBOLDT CONCAVE BASE, TYPE B: The point is complete except for the tip. Despite several inclusions, the pressure flaking is fairly regular, and the bulbs are not particularly diffuse. The basal indention appears to have been added after the lateral margins were completed. Microscopically, the edges of the blade are sinuous and sharp, with only slight polishing on the high spots. Minute multiple hinge fractures appear infrequently on the blade. In contrast, the lateral margins of the tang appear to have been rather heavily ground, especially near the distal junctures of the tang. The drastically increased rate of multiple hinge fractures on the tang suggests either intentional dulling to facilitate hafting or dulling by grit constrained by the hafting. The basal concavity exhibits only slight polishing.

RR2868 (FIG. 5C) ROSE SPRING CORNER-NOTCHED: A part of the original

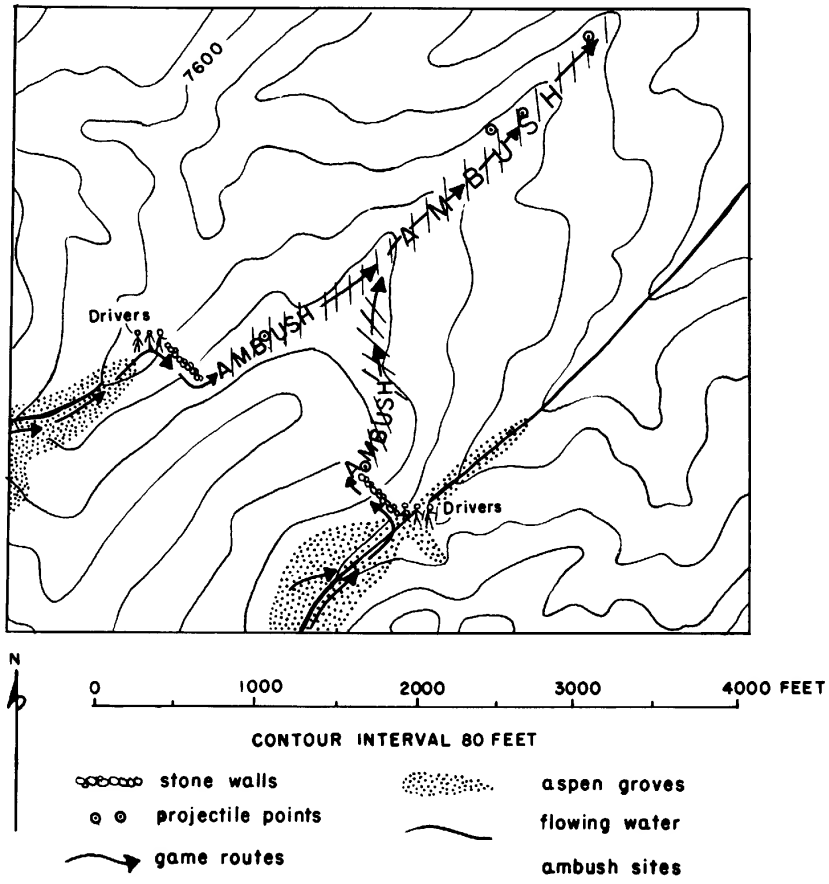

FIG. 6. Reconstruction of features as prehistoric deer fences.

flake scar remains on one surface of the point, and the pressure retouch flaking appears to be collateral. On the reverse side, the flaking is obscured by two parallel burin breaks, probably resulting from impact. One lateral margin was destroyed, presumably after manufacture was complete. No microscopic wear striations or polishing can be detected on those parts of the margin remaining intact. All flake scars appear sharp and fresh.

RR2867 (FIG. 5D) TYPE UNKNOWN: This artifact is so fragmentary that it is impossible to determine whether it is a distal or a proximal part. In addition, the surface flaking is obscured by several flake scars that presumably postdate the manufacture of the point; they probably result from breakage. No wear was observed on any of the intact edges.

RR2871 (FIG. 5E) BIFACE: This specimen appears to be a complete and

TABLE 1

MEASUREMENTS OF PROJECTILE POINTS RECOVERED AT BOB SCOTT ROCK ALIGNMENT

	RR2867	RR2868	RR2869	RR2870	RR2871
Length[a] (in mm.)					
Maximum	—	(38)[b]	(34.5)	(48)	52.5
Axial	—	(38)	(33.0)	(45.4)	52.5
Width (in mm.)					
Maximum	—	15.9	16.4	12.5	24.3
Basal	—	—	10.0	12.3	nc[c]
Thickness (in mm.)	4.4	4.4	4.6	5.7	6.9
Distal Shoulder Angle	—	190°	nc	nc	nc
Proximal Shoulder Angle	—	(130°)	nc	nc	nc
Notch Opening Index	—	(60°)	nc	nc	nc
Weight (in grams)					
Actual	1.7	2.3	2.5	3.5	8.9
Estimated	—	(2.7)	(2.6)	(3.8)	8.9
Material	Silicified rhyolite	Silicified rhyolite	Silicified rhyolite	Chalcedony	Silicified rhyolite

[a] All variables as defined by Thomas (1970a).
[b] Measurements in parentheses are estimates.
[c] No comparison.

finished artifact save for a small potlid fracture and a step fracture that removed the tip. Final flaking was probably by percussion, and the attendant bulbs of percussion are rather diffuse. Microscopic examination indicates heavy crushing on all protuberances of the base, whereas the lateral edges of the blade are even sharper and more sinuous than those in RR2867, which is made of similar material. This suggests that RR2871 was probably hafted as a projectile rather than as a skinning knife.

AGE OF THE WALLS

The best estimate of the age of the rock walls at Bob Scott Summit is made here by comparison of the few projectile points found near the walls with dated types from elsewhere in the Great Basin. The temporal ranges of some of these projectile point forms have been established by stratigraphic and radiocarbon analysis.

ROSE SPRING PROJECTILE POINT SERIES

Because RR2868 is badly broken, identification to series is tentative. Especially critical to identification is the Proximal Shoulder Angle (PSA), as defined by Thomas (1970a), which is estimated at less than 130 degrees.

The Notch Opening Index (Distal Shoulder minus PSA) is somewhat greater than 60 degrees. These estimated parameters suggest that the specimen RR2868 is a Rose Spring Corner-notched projectile point.

In the central Nevada cultural sequence, the Rose Spring Series is diagnostic of the Underdown phase, which has tentatively been assigned the time range AD 500 to AD 1300 on the basis of several radiocarbon dates (Thomas, MS, table 3.2). The nearest known site of this phase is Gatecliff Shelter, about 35 miles from the Bob Scott Summit rock walls.

Humboldt Series

Two other points, RR2869 and RR2870, are Humboldt Concave Base, type B (HCB-B). The age of the Humboldt series is not well established in the Great Basin projectile point typology, but the data in Hidden Cave in the Carson Sink led Roust and Clewlow (1968, p. 108) to place Humboldt Concave Base, type A (HCB-A) points during Anathermal times, i.e., prior to about 5000 BC. O'Connell (MS) dated this form somewhat later, between 2000 BC and AD 500, and suggested that the HCB-B form, defined as less than 2.0 grams, corresponds to the Alkali phase of Surprise Valley, California, *ca.* AD 500–1500 (for discussion, see Thomas, 1970a).

A few comparable data are found also in the eastern Great Basin. At Newark Cave in White Pine County, Fowler (1968) obtained a radiocarbon age of 5470 ± 400 years: 3520 BC (WSU-511), which seems to date the HCB-A form. Similarly, Aikens (1970) reported that HCB (subtype unknown) ranges in age from 5850 BC to 650 BC at Hogup Cave in western Utah. As these 19 points weigh between 2.8 and 6.0 grams, we can assume that the Hogup points are generally HCB-A, in the terminology of Thomas (1970a). In reworking the projectile point sequence from nearby Danger Cave, Aikens (1970, table 6) found 10 of the 15 Humboldt Series points present in Stratum DV, postdating 3000 BC (Jennings, 1957, p. 93). As these specimens range in weight from 2.0 to 4.0 grams, it is probably correct to assume that both HCB-A and HCB-B types are present at Danger Cave.

Using a different approach, Layton (MS) proposed an alternative sequence. On the grounds that his collection from the Hanging Rock Shelter in northwestern Nevada "is the first excavated collection large enough to allow temporal relationships within the Humboldt series to be worked out" (p. 247), he rejected the traditional three-part division of the Humboldt series (HCB-A, HCB-B, and Humboldt Basal-notched) on the grounds that "the variability in form (in the Hanging Rock collection) is not adequately described by the Heizer-Clewlow typology of the Humboldt Lakebed collection" (p. 249). Instead, Layton proposed six numbered

and lettered types, based strictly on form without consideration of size. We think that specimen RR2869 superficially corresponds to Layton's Humboldt no. 3 type, and that artifact RR2870 corresponds to Humboldt no. 2 type. Layton's chronology, based almost exclusively on an obsidian hydration sequence, seems to place type no. 2 within the time range of the Elko, Eastgate, and Rose Spring series, and type no. 3 seems to date slightly later, probably during the time span of the Eastgate and Rose Spring series. In terms of the central Nevada phasing, these dates would indicate an age of either the Reveille phase, *ca.* 1000 BC to AD 500 or the Underdown phase, *ca.* AD 500–1300 (Thomas, MS).

Although these data are scanty, the best estimate of the age of the Bob Scott Summit rock features based on projectile point typology is the Reveille or Underdown phases, i.e., from *ca.* 1000 BC to AD 1300. Even if these dates ultimately prove correct, nothing excludes the possibility of an earlier manufacture or a later usage of the rock feature.

INTERPRETATIONS OF THE WALLS

The rock walls can be interpreted as a prehistoric deer fence, for the immediate vicinity today hosts a sizable deer population. During July, 1972, 16 deer were seen in this area, in groups comprising as many as seven animals. The area is typical summer range for the Toiyabe Range mule deer (*Odocoileus hemionus*) herds, and a fairly large number of animals are present, despite the intensive pressure of hunters.

Although deer fences have not been specifically reported for the Great Basin Shoshoneans, such structures are known ethnographically throughout most of North America (Driver and Massey, 1957, p. 253), and they are especially common in the western states. Deer fences were used, for instance by the Shasta (Dixon, 1907, p. 431), the Wiyot (Powers, 1887, p. 102), the Lassik (Kroeber, 1925, p. 144), the Maidu (Dixon, 1905, pp. 192–193), the Achumawi (Dixon, 1907, p. 431), the Takelma (Sapir, 1907, p. 260), and the Shuswap (Teit, 1909, p. 521).

We have reconstructed one way in which the Bob Scott Summit rock walls could have aided prehistoric hunters in ambushing deer (fig. 6). Linsdale (1938, p. 199) reported that a significant annual migration of deer occurs between the Toiyabe Range and adjoining Big Smoky Valley, so the walls could have aided in diverting migrating herds. Furthermore, modern game commonly congregates in the thick aspen groves along the streams at the base of both walls. Deer can be readily flushed out of the riverine groves and directed upward along either wall. The cliffy outcrops near the east wall (fig. 2) provide ideal cover for a hunter in ambush, and, in fact, two projectile points (RR2867 and RR2868) were found near the

outcrops. Several large rocks high on the slope could have aided further in directing deer along the ridge top where the additional projectile points were found.

Although neither rock fence was probably more than 3 feet tall, this height must be satisfactory to divert deer into ambush. In discussing the mule deer herd on the Hasting Reservation in northern Monterey County, California, Linsdale and Tomich noted that the short (36″-44″) barbed wire fences were "seldom a barrier to the deer, although they nearly always modify the behavior of an animal encountering them. A deer may hesitate at a fence and follow it for many yards before attempting a 'crossing' " (1953, p. 294). The Bob Scott Summit stone walls could have easily directed the deer toward the ambush, and brush may have been added to increase the apparent height of the diversion fence.

A difficulty with the deer fence hypothesis is the relative scarcity of deer in known archeological context within the Great Basin. In a brief survey of prehistoric faunal remains recovered from 19 archeological sites in this area, Thomas (1970b) found that, in general, deer remains become frequent only after about AD 1000. The faunal remains indicate that the mountain sheep was probably the most commonly hunted artiodactyl, and antelope also generally outnumbered deer in these sites. Steward (1941, p. 218) also reported that the Shoshoni of the Reese River area rarely hunted deer.

An alternative hypothesis is that the rock alignments assisted in driving and ambushing antelope (*Antilocapra americana*), once relatively common in the Great Basin. Antelope live in large herds—sometimes numbering more than a thousand in winter—and they were efficiently hunted by the historic Shoshoni. Steward (1941, p. 219) has summarized their technique:

"Most antelope hunting was communal, large numbers of persons assembling from considerable distances once or twice a year for that purpose. The complex included practical and magico-religious measures and social features, and closely resembled the Plains and northern impounding of various species, from whence it was probably derived. The practical elements were: a leader (who was also shaman); a drive to the corral by several hunters (in some localities the antelope were said to have been attracted to the corral by the shaman's power, driving being unnecessary); a corral with wings converging to its opening (often, the corral was of poles supporting brush to resemble people and spaced from 10 to 20 feet apart, with people stationed in between them; in this case, it approximates a surround rather than true corral) shooting with arrows as the animals mill around inside the corral; an equal division of the kill."

A somewhat similar arrangement was reported for the southern Paiute

of the Kaibab Plateau (Kelly, 1964, p. 50). A 500-foot long barrier with an opening in the middle was constructed. Antelope were driven toward the fence and ambushed as they passed through the opening. The walls at Bob Scott Summit seem well suited to a similar communal hunting of antelope. In this area, antelope prefer the sagebrush flats and low piñon-juniper biotic communities, rarely venturing into the dense aspen groves at higher elevations. To conduct an ambush using the rock walls described here would require driving the antelope from the open land northeast of the ridge (Grass Valley) into the canyons where they would encounter the walls and be channeled to a point of ambush (fig. 7).

It is possible that fire was used to drive antelope into this area, for fire-driving has been reported for the Little Lake Paiute (Steward, 1938, p. 82). The most difficult part of the drive would occur after the herd entered the uplands; perhaps this is why two fences were constructed, one on either side of the ridge, for whether the herd headed directly up Bade Creek Canyon or veered off into the small canyon to the northwest, a diversion fence would be ready to draw the herd into ambush. Antelope-driving would thus have run the animals along the northeastern side of the fence rather than the southwestern side as probably required for deer.

Both of the hypotheses assume that the walls were involved with some aspect of prehistoric hunting, which we believe is likely. But we cannot reject a priori an alternative proposition that the walls were ceremonial, without practical subsistence significance. On the dry lakebeds of Western Australia, for instance, there are several serpentine alignments of stone slabs, one of which is more than 200 feet long (Gould, 1969, p. 144) and which the local Aborigines maintained had a ceremonial rather than hunting function. At a locality in the Clutterbuck Hills, Gould observed that the aborigines periodically traveled to a similar alignment in order to upright the toppled slabs and to clear away the weeds and accumulated rubble; there was no hunting function involved at all.

"The meaning of the rock arrangements and the natural features surrounding them was so closely tied to specific details of the totemic mythology as to defy any interpretation by inspection. Just looking at these rocks, without the benefit of instruction by members of the appropriate cultlodge, would never bring this kind of information to light. But, as this and other cases showed, a more generalized but still useful interpretation would be possible in situations where Aborigine behavior can no longer be observed. Rock alignments and artificial rockpiles are consistently interpreted as the bodies or paraphernalia of totemic beings changed by themselves into lithic form" (Gould, 1969, p. 144).

Although religious involvement with such stone structures may be

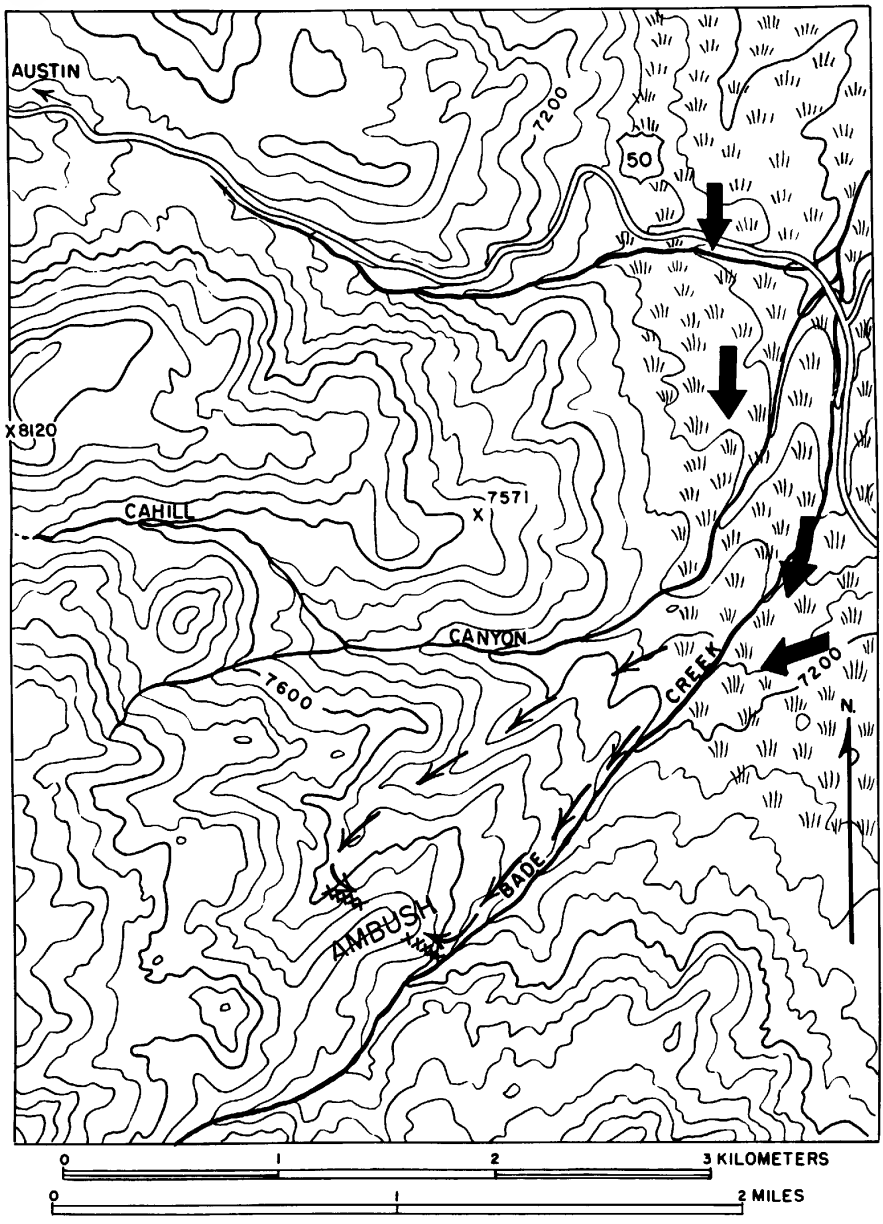

FIG. 7. Reconstruction of features as used in prehistoric communal antelope drives.

important in Australia today, such usage does not explain the origin of the alignments. We should also point out that ceremonial usage of walls such as this is unknown among the ethnographic western Shoshoni, despite the fact that these groups preserved most of their aboriginal lifeway until midcentury, and that archaeological evidence seems to indicate considerable cultural continuity between prehistoric groups and the tribes before the arrival of Europeans. In addition, the walls at the Bob Scott Summit are more formidable than those reported from Australia, and would have required several times the labor to construct. For these reasons, we think the ceremonial explanation is improbable in this case.

Additional alternative explanations could be proferred for the Bob Scott Summit walls. We know of somewhat similar walls that were built within the last hundred years to help in rounding up horses or cattle. But such walls sometimes have wooden gates constructed with lumber and nails, or supports that are wired together. No wire or nails were present at the Bob Scott site to recommend this possibility. It is also possible that seasonally aggregating groups of mountain sheep could have been lured into ambush through use of these walls, but bighorn sheep today live at much higher elevations in this area. Although the feature could possibly have been used for prehistoric communal drives of jackrabbits, ethnographic evidence indicates that such drives were usually conducted by means of long "rabbit nets," which are similar to modern tennis nets (Steward, 1938, pp. 38–39). Not only were the nets portable, but the rabbits became rapidly entangled in the mesh and could be readily dispatched. We think it unlikely that people would build a massive stone wall requiring an enormous amount of labor, when light nets would be more effective. It is even possible that the rock features were constructed to drive bison, but Seton (1929) placed the precontact range of bison to the north of the Bob Scott Summit.

Having proposed several alternative explanations for the Bob Scott Summit rock walls, we shall not attempt to prove any one possibility. In fact, the most plausible explanation is probably a combination of hypotheses. More than likely, deer were occasionally hunted, antelope were sometimes stampeded by the walls, and perhaps even a few mountain sheep were killed at the site. The fences may also have had secondary ceremonial significance, as was clearly the case elsewhere in the Great Basin where rock art has been found associated with identical fences. At this stage of investigation, more data are needed to test our preliminary interpretations. Specifically, we must know whether such features consistently occur in particular microtopographic settings, such as on deer migration routes,

near habitat suitable for antelope driving, or in the higher country where bighorn sheep could have been effectively ambushed.

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